Curriculum Map	Subject	MATHS	Year	KS4

Unit	Summary	Skills (This is not an exhaustive list) Higher content in bold	Assessment	British Values and SMSC	Career links	Cross-curricular links
Similarity	Congruence, similarity and enlargement Trigonometry	Compare lengths, areas and volumes using ratio notation and/or scale factors; make links to similarity Interpret and use fractional **(and negative)** scale factors for enlargements Apply the concepts of congruence and similarity including the relationships between lengths, **(areas and volumes)** in similar figures Apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles in two **(and three)** dimensional figures. **(know and apply the sine and cosine rule to find unknown angles and lengths)**	Alongside the schemes of learning there is an assessment for each block in Year 10.	Historical life and the history of mathematics. Shapes in real world and in nature. Walk in the countryside – wellbeing.	Landscaping and gardening. Hairdressers. Engineering. Designers. Games designer. Roller coaster designer.	Design technology. PE – dance and drama. Science – drawing and interpreting speed, distance time graphs. Calculate density.
Developing algebra	Representing solutions of equations and inequalities	Extend understanding of algebraic simplification and manipulation to include quadratic expressions **Solve quadratic equations algebraically by factorsing**				

	Simultaneous equations	Solve linear inequalities in **(or two)** variable **(s), (and quadratic inequalities in one variable)**; represent the solution set on a number line**, (using set notation and on a graph)** Solve two simultaneous equations in tow variables (linear/linear (**or linear/quadratic)** algebraically. Recognise, sketch and interpret graphs of linear and quadratic functions.				
Geometry	Angles and bearings Working with circles Vectors	Reason deductively in geometry, number and algebra, including using geometrical constructions Calculate arc lengths, angles and areas of sectors and circles **Apply and prove the standard circle theorems concerning angles, radii, tangents and chords and use them to prove results.** Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and				

		column representation of vectors **(use vectors to construct geometric arguments and proofs).**				
Proportions and Proportional change	Ratios and fractions Percentages and interest Probability	Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions. Apply the concepts of congruence and similarity, including the relationships between lengths **(areas and volumes)** in similar figures. Set up, solve and interpret the answers in growth and decay problems, including compound interest **(and work with general iterative processes)** Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations. **(Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams)**		Theory versus reality. Modelling pandemic – analysis. Prime minister and politics. Rule of law.	Cryptanalyst. Stocks and shares. Stock broker. Jet fighter pilot. Forensic scientist. Actuary. Statistical analysis. Forensic scientist. Prime minister.	Science. Geography.

Delving into data	Collecting, representing and interpreting data	Construct and interpret tables, charts and diagrams. **(construct and interpret diagrams for grouped discrete data and continuous data i.e. histograms)**		Election data. Study of the creation of questionnaires and examine bias and sampling methods. Examples to teach different aspects of mathematics can come directly from statistics used in law. This might include taxation or calculations which need to be made to make sure that industry complies with Health and Safety legislation. Statistics can also be used to identify the impact of legislative change. The Office of National Statistics may be helpful (GCSE students) and it could include use of national statistics to identify strong, weak and negative correlation in understanding the dangers of assuming causation. At all times within the subject, students are encouraged to recognise an individual's strength and support their development. Students are encouraged to embrace diversity and treat all others with respect both in and out of the classroom. Stock market. Medicine. Weather predictions.	Stock market. Medicine. Weather predictions. Market analyst	Geography – world data History – historical information PE – Olympic data
Using number	Non-calculator methods Types of number and sequences	Calculate exactly with fractions, **(surds)** and multiples of pi, **(simplify surd**		Fibonacci sequences are found in nature and everyday life.	Computer programmer Medical scientist	Computer science – programming link to function machines.

	Indices and roots	**expressions involving squares and rationalise denominators)** Deduce expressions to calculate the nth term of linear **(and quadratic)** sequences. Calculate with roots and with integer **(and fractional)** indices. Simplifying expressions involving sums, products and powers including the laws of indices.		The magic of pi and circles in the world around us. The use of pi in technology.		
Year 11 (2021 – 2022) – bespoke planning following the question level analysis on the Year 10 end of year assessments. Year 11 (2022-2023) will follow the White Rose Maths scheme of learning.						